

Claims

1. A method of purifying contaminated oil from particles suspended therein by means of a liquid separation aid having a density larger than that of the oil and being dispersed in the contaminated oil in order to make the particles more easily separable from the oil, the method comprising
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- supplying said contaminated oil and said liquid separation aid into a separation chamber of a rotating centrifugal rotor,

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  - separating in said separation chamber the particles and the liquid separation aid from the oil by centrifugal force,
  - discharging purified oil from the separation chamber through a central light phase outlet thereof and

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  - discharging separated particles together with separated liquid separation aid from the separation chamber through a heavy phase outlet of the separation chamber, situated radially outside said central light phase outlet,

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- characterized by
- pre-charging the separation chamber, before supplying a substantial amount of contaminated oil thereinto, with a starting liquid, which is

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  - heavier than the oil and insoluble therein, in an amount such that a layer of the starting liquid forms a liquid seal in the centrifugal rotor, covering said heavy phase outlet,

- supplying thereafter said contaminated oil and said liquid separation aid into the separation chamber, and
  - discharging from the separation chamber through said heavy phase outlet at least part of said starting liquid and particles together with liquid separation aid, separated from the oil.
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2. A method according to claim 1, characterized by using as said starting liquid an amount of said liquid separation aid.
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3. A method according to claim 1, characterized in that the oil is a mineral or synthetic oil containing additives giving the oil desired properties for its intended use, the density of the oil being in the interval 0,85 – 1,05 g/cm<sup>3</sup> at 40°C.
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4. A method according to claim 3, characterized in that the oil is a pure mineral oil having a density of 0,85 - 0,90 g/cm<sup>3</sup> at 40 °C.
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5. A method according to claim 4, characterized in that the mineral oil is one that has been used as an insulating agent in a transformer or tap changer, is free from additives, apart from necessary oxidation inhibitor, and is contaminated with very small soot particles, the separation aid being a liquid polymer.
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6. A method according to claim 3, characterized in that the oil is one that has been used as a lubrication oil for Diesel engines and is contaminated with small dispersed particles, the separation aid being a liquid polymer.

7. A method according to claim 5 or 6, characterized in that the polymer is a polyhydroxy alkoxylate having a density of 1,0-1,1 g/cm<sup>3</sup> at 40 °C.